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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/561,057

**Applicant(s)**

LIU ET AL.

**Examiner**

FAN NG

**Art Unit**

4145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date 03/20/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim(s) 1 is/are objected to because of the following informalities: "... after being processed by the MAC-c/sh are multiplied with logic channels and form ...". The word multiplied should be multiplexed. Since the claim read in light of the specification, and Multiplexed is disclosed in specification.

2. Because of claim(s) 1 is/are objected, therefore its dependent claim(s) 2-11 is/are also objected.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim(s) 1, 5 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Bly (2004/0032875) in view of Malkamaki (2003/0174662).

5. As per claim 1, a method for marking a Diffserv Code Point (DSCP) while achieving guaranteed quality of service (QoS) by using Differentiated Services (Diffserv) in the wireless access network of the IP-based universal mobile telecommunication system (UMTS), wherein said mobile communication system comprises a core network, one or more universal terrestrial radio access networks (UTRANs) and a plurality of user equipments (UEs), wherein the core network communicates with the UTRAN via an Iu interface, and said UTRAN communicates with one or more UEs via Uu interfaces, each of said UTRAN comprises a plurality of radio network controllers (RNCs) and one or more Nodes B communicating with said RNC via Iub interfaces, and each Node B comprises one or more cells, and the communication between the RNCs being performed via Iur interfaces; said method comprising the following steps of:

6. **Bly teaches in the outgoing direction (Fig. 2, traffic is outgoing, because it is a node, the traffic either go to next node of destination) of the Iub interfaces at the Node B side (Fig. 3, #32 is an interface to forward traffic to shaping engine, and Fig. 3, #32 itself is a node, see [0025]), classifying all the uplink Iub interface data streams generated by the Node B into DCH FP data frames, RACH/CPCH FP data frames, and Node B Application Part (NBAP) signaling and Operation & Maintenance (O&M) data streams, (Fig. 2, [0007], and [0027]: classify ... traffic ... depends on characteristics. Know, all the names of data frames did not give any specific**

definitions, thus they just labels to represent different type of data frames. The prior art classify the traffic (data frames or packets) by their characteristic, means the traffic has different characteristic. ) and assigning and adjusting the priorities of the classified data streams ([0027-0028]: shaping engine selects one of the shaping queues, which include priority. Know that when shaping engine select the shaping queues, it assign the traffic also it adjust the traffic, because when select a queues it assign priority to a traffic, at the same time it may change the original priority thus it is accomplish adjust too) according to the principles for optimizing the QoS and radio resources ([0027]: different priority for different type of data is QoS principles. [0029]: different rate for different queues which utilized the radio resources, because higher rate means higher bandwidth, and bandwidth is radio resource);

7. ... classifying the transmitted data into: (Fig. 2, [0007], and [0027]: classify ... traffic ... depends on characteristics)
8. ... DCH FP data frames transparently forwarded from the lub interfaces;
9. ...RACH/CPCH FP data frames from the lub interfaces (Know, all the names of data frames did not give any specific definitions, thus they just labels to represent different type of data frames. The prior art classify the traffic (data frames or packets) by their characteristic, means the traffic has different characteristic. See Fig. 2, [0007], and [0027]. Also the interface before forward the

**data frame is Fig. 3, #32, in fact it is inherent, that any node has an interface to forward packet. In addition, all the data frames are electrical signal thus it can't be see by human eyes, thus frame are transparently forwarded),**

10. **assigning and adjusting the priorities of the classified data streams ([0027-0028]: shaping engine selects one of the shaping queues, which include priority. Know that when shaping engine select the shaping queues, it assign the traffic also it adjust the traffic, because when select a queues it assign priority to a traffic, at the same time it may change the original priority thus it is accomplish adjust too) according to the principles for optimizing the QoS and radio resources ([0027]: different priority for different type of data is QoS principles. [0029]: different rate for different queues which utilized the radio resources, because higher rate means higher bandwidth, and bandwidth is radio resource);**

11. **... DCH/HS-DSCH FP data frames transparently forwarded from the lur interfaces;**

12. **... DSCH FP data frames from the lur interfaces, (Know, all the names of data frames did not give any specific definitions, thus they just labels to represent different type of data frames. The prior art classify the traffic (data frames or packets) by their characteristic, means the traffic has different characteristic. See Fig. 2, [0007], and [0027]. Also the interface before forward the data frame is Fig. 3, #32, in fact it is inherent, that any node has an interface to forward packet. In**

**addition, all the data frames are electrical signal thus it can't be see by human eyes, thus frame are transparently forwarded),**

13. and directly transmitted to the Node B; and NBAP signaling and O&M data streams (Fig. 2, [0007], and [0027]: **classify ... traffic ... depends on characteristics. Know, all the names of data frames did not give any specific definitions, thus they just labels to represent different type of data frames. The prior art classify the traffic (data frames or packets) by their characteristic, means the traffic has different characteristic. ), and assigning and adjusting the priorities of the classified data streams ([0027-0028]: shaping engine selects one of the shaping queues, which include priority. Know that when shaping engine select the shaping queues, it assign the traffic also it adjust the traffic, because when select a queues it assign priority to a traffic, at the same time it may change the original priority thus it is accomplish adjust too) according to the principles for optimizing the QoS and radio resources ([0027]: different priority for different type of data is QoS principles. [0029]: different rate for different queues which utilized the radio resources, because higher rate means higher bandwidth, and bandwidth is radio resource).**

14. **Bly doesn't teach** in the outgoing direction of the Iub interfaces at the RNC side, ... Uplink ...

15. medium access control (MAC) layer service data units (SDU) processed by the MAC layer functional entity (MAC-c/sh) forming the corresponding upward lur interface RACH/CPCH FP data frames
16. downlink lur interface FP data frames generated by the RNC as a SRNC and transmitted to a Drift Radio Network Controller (DRNC) and radio network sub-system application part (RNSAP) signaling streams
17. downlink lur interface FACH FP data frames which, after being processed by the MAC-c/sh are multiplied with logic channels and form downlink lub interface downlink FACH FP data frames
18. downlink lub interface FP data frames generated by the RNC
19. **Malkamaki teaches** in the outgoing direction of the lub interfaces at the RNC side ([0017]: the radio link control (RLC) layer is reside in both mobile station (MS) and network unit (NE), furthermore RLC is inside the radio network control (RNC), thus in Fig. 2a, data is transmit from MS to NE, is equivalent to outgoing direction from RNC, furthermore, it is inherent to has a interface for any node)... uplink (Fig. 2a data transmit from MS to NE, generally consider as uplink)
20. medium access control (MAC) layer service data units (SDU) processed by the MAC layer functional entity (MAC-c/sh) ([0017]: RLC-SDU is processed by MAC layer, and it is inherent, that MAC layer must has some kind of function, since MAC-c/sh is not defined, it just a label of the process function) forming the



corresponding upward lur interface RACH/CPCH FP data frames ([0017]: the forming packet is RLC PDU, more over, the data is transmit to Network thus it is uplink);

21. downlink lur interface FP data frames generated by the RNC as a SRNC and transmitted to a Drift Radio Network Controller (DRNC) ([0017]: is shown RNC is inside both mobile and network thus transmit data between them is from one RNC to another RNC. And data from network to MS is downlink);

22. and radio network sub-system application part (RNSAP) signaling streams (Fig. 3 is a radio network and MS #200 is a sub-system which has application e.g. talking, thus the signal MS generate is RNSAP signal streams), and

23. and in the outgoing direction of the lur interface at the RNC side ([0017]: the radio link control (RLC) layer is reside in both mobile station (MS) and network unit (NE), furthermore RLC is inside the radio network control (RNC), thus in Fig. 2a, data is transmit from MS to NE, is equivalent to outgoing direction from RNC, furthermore, it is inherent to has a interface for any node)... downlink (Fig. 2c and [0041] data transmit from BS to MS, generally consider as downlink) ...,

24. the MAC layer SDUs processed by the MAC-c/sh ([0017]: RLC-SDU is processed by MAC layer, and it is inherent, that MAC layer must has some kind of function, since MAC-c/sh is not defined, it just a label of the process function)

forming the corresponding downlink lub interface DSCH FP data frames ([0017]: the forming packet is RLC PDU, moreover, Fig. 2c BS is transmit to MS thus it is downlink);

25. downlink lur interface FACH FP data frames which, after being processed by the MAC-c/sh ([0017]: data packet is process by MAC layer (MAC function)), are multiplied with logic channels ([0019]: data packet is multiplexed together, also see objection) and form downlink lub interface downlink FACH FP data frames ([0017]: the forming packet is RLC PDU, moreover, Fig. 2c BS is transmit to MS thus it is downlink);

26. downlink (Fig. 3, from BS to #200 is downlink) lub interface FP data frames generated by the RNC (Fig. 3, data packet is generate from RNC)

27. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.

28. As per claim 5, **Bly and Malkamaki teach** the method as defined in claim 1, wherein the step of assigning the priority of various data streams in the outgoing direction of the lub interfaces at the Node B side further comprises the step of:
29. **Bly teaches** regarding the DCH FP data frames and RACH/CPCH FP data frames in the uplink lub interface data streams generated by the Node B (Fig. 3, [0025] **is a node, it generate different type of data see [0027]. Because data is forward to another node it is uplink),**
30. assigning the corresponding priorities to the DCH FP data frames and RACH/CPCH FP data frames according to the borne classes of services ([0027-0028]: **priorities are assigned according to their class (voice or video, email etc.), and they are coming from different channel see Fig. 2);**
31. the step of assigning the priority of various data streams ([0027])
32. assigning the priorities of the IP packets corresponding to respective FP data frames according to the classes of services borne by the corresponding transmission channels ([0027-0028]: **priorities are assigned according to their class (voice or video, email etc.), and they are coming from different channel see Fig. 2);**

33. determining the priorities of the IP packets corresponding to respective FP data frames according to the classes of services borne by the corresponding transmission channels ([0027-0028]: **priorities are assigned according to their class (voice or video, email etc.), and they are coming from different channel see Fig. 2).**

34. **Bly doesn't teach** ... data streams in the outgoing direction of the lub interface at the RNC side further comprises the step of:

35. regarding the downlink lub interface FP data frames generated by the RNC and directly transmitted to the Node B

36. ... data streams in the outgoing direction of the lur interface at the RNC

37. regarding the downlink lur interface FP data frames generated by the RNC as a SRNC and transmitted to the DRNC and the RNSAP signaling

38. **Malkamaki teaches** ... data streams in the outgoing direction of the lub interface at the RNC ([0017]: **the radio link control (RLC) layer is reside in both mobile station (MS) and base station BS, furthermore RLC is inside the radio network control (RNC), thus in Fig. 3, data is transmit from MS to BS, is equivalent to outgoing direction from RNC, furthermore, it is inherent to has a interface for any node)** side further comprises the step of:

39. regarding the downlink Iub interface FP data frames generated by the RNC and directly transmitted to the Node B (**Fig. 3, is a bi-directional transmission, data frames from RNC #220 to #200, is also consider as downlink**),

40. ... data streams in the outgoing direction of the Iur interface at the RNC ([0017]: **the radio link control (RLC) layer is reside in both mobile station (MS) and base station BS, furthermore RLC is inside the radio network control (RNC), thus in Fig. 3, data is transmit from BS to MS, is equivalent to outgoing direction from RNC, furthermore, it is inherent to has a interface for any node**) side further comprises the step of:

41. regarding the downlink Iur interface FP data frames generated by the RNC as a SRNC and transmitted to the DRNC and the RNSAP signaling (**Fig. 3, BS to #200 is downlink, it is inherent to has an interface for any node. And [0017]: the radio link control (RLC) layer is reside in both mobile station (MS) and base station BS, furthermore RLC is inside the radio network control (RNC) ),**

42. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in

the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.

43. Claim(s) 2, 6-8, 10 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Bly (2004/0032875) in view of Malkamaki (2003/0174662) and further in view of Giroux (6618378).

44.

As per claim 2, **Bly and Malkamaki teach** the method as defined in claim 1, wherein the step of assigning the priorities of various data streams in the outgoing direction of the lub interfaces at the Node B side further comprises the following steps of:

45. **Bly teaches** regarding DCH FP data frames and RACH/CPCH FP data frames in the uplink lub interface data streams generated by the Node B (**Fig. 3, [0025] is a node, it generate different type of data see [0027]. Because data is forward to another node it is uplink**),

46. **Bly doesn't teach** assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams. increasing the priority of the IP packets from the Node B. increasing the priority of the IP packets bearing the DCH FP data frames and marking DSCP values of the IP packets according to the priority of the IP packets ... regarding the DCH FP data frames which need to reach the SRNC through the DRNC ...

47. **Giroux teaches** assigning a highest priority to the NBAP signaling (col. 14, line 33-35) and assigning a lower priority to the O&M data streams (col. 1, line 65-67: **“when the cell has lower priority...”, which means some cell must be assigned with lower priority)**

48. **increasing the priority of the IP packets from the Node B (IP packet is from ATM node, so can be called Node B, and col. 2, line 24-26: increasing the priority of IP);**

49. **increasing the priority of the IP packets bearing the DCH FP data frames (col. 2, line 24-26: increasing the priority of IP, also it is inherent that IP packet has data frame);**

50. **and marking DSCP values of the IP packets according to the priority of the IP packets (col. 4, line 37-40) and the unified mapping relation of the RNC/Node B (IP packets are coming out of a node (Fig. 2), therefore it is inherent that a node has routing table which is a mapping the IP packet to different location, since different priority IP streams go to different location, then priority of IP packets is also depends on routing table (mapping)).**

51. **Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly**

suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data stream, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

52. **Bly and Giroux do not teach** regarding the DCH FP data frames which need to reach the SRNC through the DRNC ...

53. **Malkamaki teaches** regarding the DCH FP data frames which need to reach the SRNC through the DRNC (**RLC is in RNC and RLC is in both mobile and base station, thus packet transmit from mobile to base station is from one RNC to other RNC**), ...

54. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.



55. As per claim 6, **Bly and Malkamaki teach** the method as defined in claim 1, wherein: the step of assigning the priority of various data streams in the outgoing direction of the lub interfaces at the Node B side further comprises the step of:

56. **Bly and Malkamaki do not teach** assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams

57. **Giroux teaches** assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams (col. 1, line 65-67: “when the cell has lower priority...”, which means some cell must be assigned with lower priority);

58. the step of assigning the priority of various data streams in the outgoing direction of the lub interface at the RNC side further comprises the step of:

59. assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams (col. 1, line 65-67: “when the cell has lower priority...”, which means some cell must be assigned with lower priority);

60. and the step of assigning the priority of various data streams in the outgoing direction of the lur interface at the RNC side further comprises the step of:

61. assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams (**col. 1, line 65-67: “when the cell has lower priority...”, which means some cell must be assigned with lower priority**).

62. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data steam, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

63.

As per claim 7, **Bly and Malkamaki teach** the method as defined in claim 1, wherein: the step of assigning the priority of various data streams in the outgoing direction of the lub interfaces at the Node B side further comprises the step of:

64. **Bly and Malkamaki do not teach** increasing the priorities of the IP packets transmitted from the Node B.

65. **Giroux teaches** increasing the priorities of the IP packets transmitted from the Node B (**IP packet is from ATM node, so can be called Node B, and col. 2, line 24-26: increasing the priority of IP**).

66.

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data stream, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

67.

As per claim 8, **Bly and Malkamaki teach** a method as defined in claim 1, wherein: the step of assigning the priorities of various data streams in the outgoing direction of the lub interfaces at the Node B side further comprises the step of:

68. **Bly doesn't teach** regarding the DCH FP data frames which need to reach the SRNC through the DRNC

69. increasing the priority of the IP packets bearing the DCH FP data frames

70. increasing the priority of the IP packets bearing the DCH FP data frames

71. **Malkamaki teaches** regarding the DCH FP data frames which need to reach the SRNC through the DRNC ([0017]: **is shown RNC is inside both mobile and network thus transmit data between them is from one RNC to another RNC**);

72. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.

73. **Bly and Malkamaki do not teach** increasing the priority of the IP packets bearing the DCH FP data frames

74. increasing the priority of the IP packets bearing the DCH FP data frames

75. **Giroux teaches** increasing the priority of the IP packets bearing the DCH FP data frames **(it is inherent, that IP packet consist of data frames, and col. 2, line 24-26: increasing the priority of IP);**

76. and the step of assigning the priority of various data streams in the outgoing direction of the Iur interfaces at the RNC side further comprises the step of:

77. increasing the priority of the IP packets bearing the DCH FP data frames **(it is inherent, that IP packet consist of data frames, and col. 2, line 24-26: increasing**

**the priority of IP).**

78. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data stream, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

79. As per claim 10, **Bly and Malkamaki teach** the method as defined in claim 1: the step of assigning the priority of various data streams in the outgoing direction of the lub interfaces at the RNC side further comprises the step of:

80. regarding the downlink lub interface FACH FP data frames having been processed by the MAC-c/sh, using a predefined priority, and since the paging information is non-connected RRC message, the FP data frames of the PCH being assigned a lower priority; and the step of assigning the priority of various data streams in the outgoing direction of the lur interfaces at the RNC side further comprises the step of:

81. **Bly and Malkamaki do not teach** regarding the corresponding uplink lur interface RACH/CPCH FP data frames formed after being processed by the MAC-c/sh,

using the same one predefined priority and marking the DSCP.

82. **Malkamaki teaches** regarding the corresponding uplink Iur interface RACH/CPCH FP data frames (**Fig. 3, data from #200 to #220 is uplink**) formed after being processed by the MAC-c/sh ([0017]: **RLC-SDU is processed by MAC layer**),

83. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.

84. **Bly, Malkamaki and Giroux do not teach** ... using the same one predefined priority and marking the DSCP.

85. **Giroux teaches** ... using the same one predefined priority and marking the DSCP (**col. 4, line 54-55**).

86. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly

suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data stream, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

87. Claim(s) 3-4, 9, 11 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Bly (2004/0032875) in view of Malkamaki (2003/0174662) and further in view of Giroux (6618378) and Han (2003/0093739).

88. As per claim 3, **Bly and Malkamaki teach** the method as defined in claim 1, wherein the step of assigning the priorities of various data streams in the outgoing direction of the Iub interfaces at the RNC side further comprises the following steps of:

89. **Bly teaches** assigning corresponding IP packet priorities to the FP data streams according to the classes of the services borne by the corresponding transmission channels **([0027-0028]: priorities are assigned according to their class (voice or video, email etc.), and they are coming from different channel see Fig. 2);**

90. and regarding downlink DCH/HS-DSCH FP data frames from the Iur interfaces which need to be transparently forwarded **(all the data frames are electrical signal thus it can't be see by human eyes, thus frame are transparently forwarded),**

91. **Bly doesn't teach** regarding downlink lub interface FP data frames generated by the RNC and directly transmitted to the Node B. assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams;
92. if the FP data frames contain radio access bearer (RAB) data units of a radio link control (RLC) using an AM mode, regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs,
93. increasing the priority of the IP packets corresponding to the FP data frames;
94. regarding the downlink lub interface FACH PF data frames having been processed by the MAC-c/sh using a predefined priority,
95. and assigning a lower priority to the FP data frames of a paging channel (PCH)
96. marking the DSCP value of the IP packets according to the unified mapping relation of the RNC/Node B
97. and the lub interface DSCH FP data frames formed after being processed by the MAC-c/sh
98. a DSCP fields of the IP packets corresponding to the data frames originally entered from the lur interfaces being directly regarded as the DSCPs of the IP packets of the corresponding data frames transmitted to the lub interfaces.
99. **Malkamaki teaches**



100. regarding downlink lub interface FP data frames generated by the RNC and directly transmitted to the Node B (**Fig. 3, is a bi-directional transmission, data frames from RNC #220 to #200, is also consider as downlink**),

101. regarding the downlink lub interface FACH PF data frames (**Fig. 3, data from #220 to #200 is downlink**) having been processed by the MAC-c/sh ([0017]: **RLC-SDU is processed by MAC layer**), using a predefined priority ([0044]: **the priority order is predefined**),

102. and the lub interface DSCH FP data frames formed after being processed by the MAC-c/sh ([0017]: **RLC-SDU is processed by MAC layer**)

103. a DSCP fields of the IP packets corresponding to the data frames originally entered from the lur interfaces being directly regarded as the DSCPs of the IP packets of the corresponding data frames transmitted to the lub interfaces (**Fig. 2c, it is inherent, that MS and BS must have interface to transmit, so there are two interface, let's say lur and lub, and they are communication with IP packet, a field in the IP packet from one location to another location, it is inherent that the receiver will trade the received data as what it received**).

104. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly

suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.

105. **Bly and Malkamaki do not teach** assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams;

106. assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams;

107. if the FP data frames contain radio access bearer (RAB) data units of a radio link control (RLC) using an AM mode

108. ...regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs,

109. increasing the priority of the IP packets corresponding to the FP data frames;

110. and assigning a lower priority to the FP data frames of a paging channel (PCH)

111. marking the DSCP value of the IP packets according to the unified mapping relation of the RNC/Node B

112. **Giroux teaches** assigning a highest priority to the NBAP signaling and assigning a lower priority to the O&M data streams; **(col. 1, line 65-67: “when the cell has lower priority...”, which means some cell must be assigned with lower priority)**

113. if the FP data frames contain radio access bearer (RAB) data units **(it is inherent that data frame contains data unit)** of a radio link control (RLC) **(col. 13, line 12-15: control over the transmission (radio link) is provided)** using an AM mode **(col.1, line 11-12: using ATM mode)**

114. increasing the priority of the IP packets corresponding to the FP data frames **(col. 2, line 24-30: increase priority according to class, and class can be a field consisted of 3-bit, which is some data);**

115. and assigning a lower priority to the FP data frames of a paging channel (PCH) **(col. 1, line 65-67: “when the cell has lower priority...”, which means some cell must be assigned with lower priority);**

116. marking the DSCP value of the IP packets **(col. 4, line 37-40)** according to the unified mapping relation of the RNC/Node B **(IP packets are coming out of a node (Fig. 2), therefore it is inherent that a node has routing table which is a mapping the IP packet to different location, since different priority IP streams go to**

**different location, then priority of IP packets is also depends on routing table (mapping));**

117. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data stream, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

118. **Bly, Malkamaki and Giroux do not teach** regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs,

119. **Han teaches** regarding the IP packets bearing RLC re-transmitted PDUs **([0004])** and the IP packets bearing IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs **([0009])**,

120. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Han into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Han suggests the IP packet has status, reset and reset ack field, such as assigning different flag to these

field will allow has more control over the packet, they are in the analogues art of network protocol.

121.

As per claim 4, **Bly and Malkamaki teach** the method as defined in claim 1, wherein the step of assigning the priorities of various data streams in the outgoing direction of the lur interface at the RNC side further comprises the following steps of:

122. **Bly teaches** the RNSAP signaling, assigning the corresponding IP packet priorities to the FP data streams according to the classes of the service borne by the corresponding transmission channels **[[0027-0028]: priorities are assigned according to their class (voice or video, email etc.), and they are coming from different channel see Fig. 2];**

123. **Bly doesn't teach** and regarding uplink DCH FP data frames from the lub interfaces which need to be transparently forwarded DSCP fields of the IP packets of the corresponding data frames originally entered from the lur interfaces being directly copied as the DSCPs of the IP packets of the corresponding data frames transmitted to the lub interfaces. ... and regarding the uplink lur interface RACH/CPCH FP data frames formed after being processed by the MAC-c/sh ... and marking the DSCP

124. if the FP data frames contain radio access bearer (RAB) data units of a radio link control (RLC) using an AM mode, increasing the priority of the corresponding IP packets ... increasing the priority of the IP packets bearing the DCH FP data frames

125. once the priorities of the IP packets of the above types of data streams are determined, marking the DSCP values of the IP packets according to the unified mapping relation of the RNC/Node B ... using one same predefined priority

126. regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs

127. **Malkamaki teaches** regarding downlink Iur interface FP data frames generated by the RNC as a SRNC and transmitted to the DRNC and **([0017]: is shown RNC is inside both mobile and network thus transmit data between them is from one RNC to another RNC. And data from network to MS is downlink);**

128. if the FP data frames are the DCH FP data frames which need to reach the SRNC through the DRNC **([0017]: is shown RNC is inside both mobile and network thus transmit data between them is from one RNC to another RNC),**

129. and regarding uplink DCH FP data frames from the Iub interfaces **(Fig. 3, #200 to #210 is uplink, and it is inherent, to have interface in order to transmit, and also it is inherent, that when transmission there is data frame)** which need to be transparently forwarded **(all the data frames are electrical signal thus it can't be seen by human eyes, thus frames are transparently forwarded),**

130. DSCP fields of the IP packets of the corresponding data frames originally entered from the lur interfaces being directly copied as the DSCPs of the IP packets of the corresponding data frames transmitted to the lub interfaces (**Fig. 2c, it is inherent, that MS and BS must have interface to transmit, so there are two interface, let's say lur and lub, and they are communication with IP packet, a field in the IP packet from one location to another location, it is inherent that the receiver will trade the received data as what it received).**;

131. and regarding the uplink lur interface RACH/CPCH FP data frames formed after being processed by the MAC-c/sh ... and marking the DSCP (**[0017]: RLC-SDU is processed by MAC layer**),

132. **Bly and Malkamaki doesn't teach** if the FP data frames contain radio access bearer (RAB) data units of a radio link control (RLC) using an AM mode,

133. increasing the priority of the corresponding IP packets

134. increasing the priority of the IP packets bearing the DCH FP data frames

135. once the priorities of the IP packets of the above types of data streams are determined, marking the DSCP values of the IP packets according to the unified mapping relation of the RNC/Node B

136. using one same predefined priority

137. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Malkamaki into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Malkamaki suggests the use of all the different data types in uplink, downlink and go in and out of radio network control, such as obvious to combine for one of ordinary skill in the art, because all the data type is exist already, only need to do is to implement Bly's method on those data type, they are in the analogues art of network protocol.

138. **Giroux teaches** if the FP data frames contain radio access bearer (RAB) data units **(it is inherent that data frame contains data unit)** of a radio link control (RLC) **(col. 13, line 12-15: control over the transmission (radio link) is provided)** using an AM mode **(col.1, line 11-12: using ATM mode),**

139. increasing the priority of the corresponding IP packets **(col. 2, line 24-30: increase priority according to class);**

140. increasing the priority of the IP packets bearing the DCH FP data frames **(col. 2, line 24-30: increase priority according to class, it is inherent, that a IP packet has data frames);**

141. once the priorities of the IP packets of the above types of data streams are determined **(priorities of IP packets is already determined in the prior art),** marking



the DSCP values of the IP packets (**col. 4, line 37-40**) according to the unified mapping relation of the RNC/Node B (**IP packets are coming out of a node (Fig. 2), therefore it is inherent that a node has routing table which is a mapping the IP packet to different location, since different priority IP streams go to different location, then priority of IP packets is also depends on routing table (mapping)**);

142. using one same predefined priority (**col. 4, line 54-55**).

143. **Bly, Malkamaki and Giroux do not teach** regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs.

144. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data steam, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

145. **Han teaches** regarding the IP packets bearing RLC re-transmitted PDUs (**[0004]**) and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs (**[0009]**),

146. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Han into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Han suggests the IP packet has status, reset and reset ack field, such as assigning different flag to these field will allow has more control over the packet, they are in the analogues art of network protocol.

As per claim 9, **Bly and Malkamaki teach** the method as defined in claim 1, wherein: the step of assigning the priority of various data streams in the outgoing direction of the lub interfaces at the RNC side further comprises the step of:

147. **Bly and Malkamaki do not teach** if the FP data frames contain RAB data units of the RNC using an AM mode.

148. regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs,

149. increasing the priority of the IP packets corresponding to the FP data frames

150. and the step of assigning the priority of various data streams in the outgoing direction of the lur interfaces at the RNC side further comprises the step of:

151. if the FP data frames contain radio access bearer (RAB) data units of a radio link control (RLC) using an AM mode,

152. regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs, increasing the priority of the corresponding IP packets.

153. **Giroux teaches** if the FP data frames contain RAB data units **(it is inherent that data frame contains data unit)** of the RNC **(col. 13, line 12-15: control over the transmission (radio link) is provided)** using an AM mode **(col.1, line 11-12: using ATM mode),**

154. if the FP data frames contain radio access bearer (RAB) data units **(it is inherent that data frame contains data unit)** of the RNC of a radio link control (RLC) **(col. 13, line 12-15: control over the transmission (radio link) is provided)** using an AM mode **(col.1, line 11-12: using ATM mode),**

155. increasing the priority of the IP packets corresponding to the FP data frames **(col. 2, line 24-30: increase priority according to class, and class can be a field consisted of 3-bit, which is some data);**

156. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data stream, and assign highest and lower priority to a

packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

157. **Bly, Malkamaki and Giroux do not teach** regarding the IP packets bearing RLC re-transmitted PDUs and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs,

158. **Han teaches** regarding the IP packets bearing RLC re-transmitted PDUs **([0004])** and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs **([0009])**,

159. regarding the IP packets bearing RLC re-transmitted PDUs **([0004])** and the IP packets bearing STATUS, RESET, RESET ACK and other RLC control PDUs, increasing the priority of the corresponding IP packets **([0009])**.

160. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Han into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Han suggests the IP packet has status, reset and reset ack field, such as assigning different flag to these field will allow has more control over the packet, they are in the analogues art of network protocol.

161. As per claim 11, **Bly, Malkamaki, Giroux, and Han teach** the method according to any one of the above claims,

162. **Bly, Malkamaki, and Han do not teach** wherein when the network is congested, the data streams having a high level will have the higher priority than those having a lower level in aspect of queue and source occupancy, and the packets having a lower priority in the same queue are discarded.

163. **Giroux teaches** wherein when the network is congested (**col. 7, line 35-37**), the data streams having a high level will have the higher priority than those having a lower level in aspect of queue and source occupancy (**it is inherent, that higher priority must has advantage than lower priority, other wise the priority will assign in other way**), and the packets having a lower priority in the same queue are discarded (**col. 7, line 35-37**).

164. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Giroux into Bly, since Bly suggests to prioritize different data stream depends on their characteristic and Giroux suggests increase the priority of data steam, and assign highest and lower priority to a packet stream, such as assigning different priority to different data stream will allow more critical data go through first, they are in the analogues art of network protocol.

***Conclusion***

- a. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FAN NG whose telephone number is (571)270-3690. The examiner can normally be reached on Monday-Friday; 7:30am-5:30pm.
- b. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571)272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
- c. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 4145

167. FN

/Pankaj Kumar/

Supervisory Patent Examiner, Art Unit 4145